

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

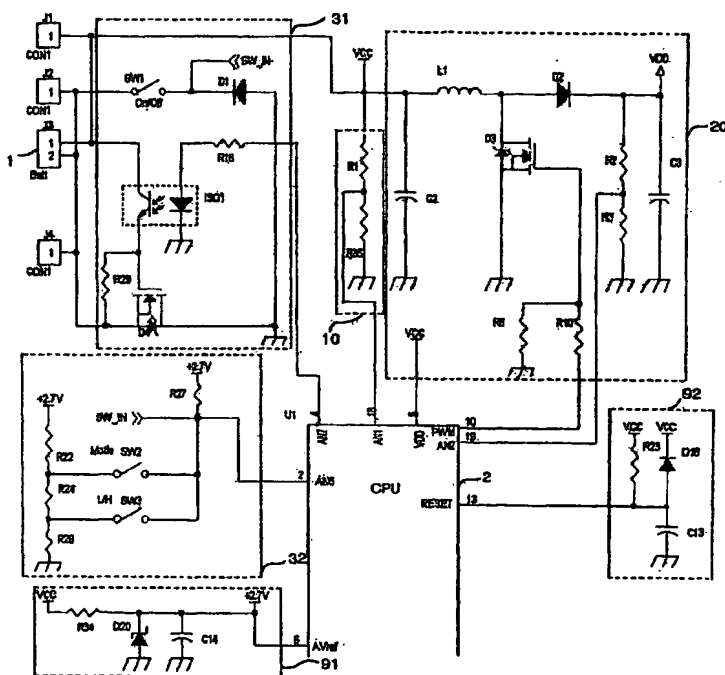
PCT

(10) International Publication Number
WO 2004/110207 A1

- (51) International Patent Classification⁷: **A45D 44/22**
- (21) International Application Number:
PCT/KR2003/002272
- (22) International Filing Date: 27 October 2003 (27.10.2003)
- (25) Filing Language: Korean
- (26) Publication Language: English
- (30) Priority Data:
10-2003-0039255 17 June 2003 (17.06.2003) KR
20-2003-0019116 17 June 2003 (17.06.2003) KR
20-2003-0019117 17 June 2003 (17.06.2003) KR
20-2003-0019118 17 June 2003 (17.06.2003) KR
- (71) Applicant (for all designated States except US): **HWANG, Seung-Young** [KR/KR]; 1003 Sambu Apt. 99-22 Samseong-dong, Gangnam-gu, 135-090 Seoul (KR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **SHIN, Hwan-Ho** [KR/KR]; 201-1006 Hyundai Apt. 1344 Yeonhyang-dong, Suncheon-si, 540-952 Jeollanam-do (KR).
- (74) Agent: **KIM, Yoon-Bae**; 9th Floor, Daelim Building, 1600-3 Seocho-dong, Seocho-gu, 137-070 Seoul (KR).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: **ADVANCED HANDABLE SKIN CARE DEVICE AND OPERATING METHOD THEREOF**



(57) Abstract: An apparatus for maintaining and supplying stable power to a skin care device comprising a DC-DC converting unit (20) for escalating the voltages from a charged battery power source (1), a skin-stimulating unit (50) with a supersonic element or an ion-inducing element, a switch unit (30) having a main switch (SW1) and various functional switches, an LCD displayer (40) for indicating various operating modes, a CPU (2) for controlling each component, a main switch initiating unit having a function when the main switch (SW1) is turned on, the CPS is activated by a switching signal inputted to an analogue input port from said CPU, the first switch unit (31) is activated by the CPU through an analogue output port, then the FET (D4) is switched to supply battery power to the DC-DC converting unit (20), and a function of the PWM control signal, which prolongs the switching-on stage for gradually increasing the voltage up to the operating voltage during the step-up stage, and inversely shortens the switching-off stage for gradually decreasing the operating voltage during the step-down stage. A strength-adjusting switch (SW3) for controlling the strength of output voltage of the DC-DC converting unit (20),

and a mode switch (SW2) for operating various modes of supersonic vibrations controlled by each vibrating frequency. An LED displayer being equipped with a minimum number of connecting pins for indicating various operating modes. Each LED is independently activated to turn on and off according to each signal of the input-output terminal from a controlling unit of the CPU.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.